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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
10 050,169	01 18 2002	Shinichiro Ikemasu	970607B	9818

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EXAMINER

WEISS, HOWARD

ART UNIT PAPER NUMBER

2814

DATE MAILED: 12 11 2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/050 169

Applicant(s)

IKEMASU ET AL

Examiner

Howard Weiss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-108 ~~is~~ are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-108 ~~is~~ are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2002 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/876,908.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 4 & 7
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

Art Unit: 2814

Attorney's Docket Number: 970607B

Filing Date: 1/18/02

Continuing Data: Division of 08/876,908 (6/16/97 now U.S. Patent No. 6,344,692)

Claimed Foreign Priority Date: 7/18/96 (JPX)

Applicant(s): Ikemasu et al. (Okawa)

Examiner: Howard Weiss

Specification

1. The disclosure is objected to because of the following informalities: in Line 1 on Page 1, ---now U.S. Patent No. 6,344,692--- should be inserted after "1997." Appropriate correction is required.
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Initially, and with respect to Claims 5 and 11, note that a "product by process" claim is directed to the product per se, no matter how actually made. See *In re Thorpe et*

al., 227 USPQ 964 (CAFC, 1985) and the related case law cited therein which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. As stated in Thorpe,

even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington*, 411 F.2d 1345, 1348, 162 USPQ 145, 147 (CCPA 1969); *Buono v. Yankee Maid Dress Corp.*, 77 F.2d 274, 279, 26 USPQ 57, 61 (2d Cir. 1935).

Note that the Applicant has burden of proof in such cases as the above case law makes clear.

5. Claims 1 to 5, 8 to 41, 43 to 47, 50 to 67 and 72 are rejected under 35 U.S.C. § 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Narui et al. (U.S. Patent No. 6,150,689).

Narui et al. show all aspects of the instant invention (e.g. Figure 3) including:

- a substrate **1**
- a switching or memory cell transistor **Qt** with an insulated gate **8A** and source/drain regions **9**
- an insulator laminate including a lower part **18** covering said switching transistor and containing a nitride layer **10** and a higher part **31,39** having a planarized upper surface over the memory cell transistor
- a first conductive plug **20** formed in a first contact hole **22** and connected to a source/drain region
- a memory cell capacitor **C** with a storage electrode **33**, a capacitor dielectric **34** and an opposing electrode **35** having an extension with is connected to a second conductive plug **44** via a second contact hole **42**

- a third conductive plug **BL₁** formed above said lower part and connected to an upper surface of a lower conductive member **20**
- contact holes and conductive members (i.e. bit lines) as claimed in a peripheral circuit

As to the grounds of rejection under section 103(a), when the silicon nitride is patterned is an intermediate process step and does not affect the final device structure. See MPEP § 2113 which discusses the handling of "product by process" claims and recommends the alternative (§ 102 / § 103) grounds of rejection.

6. Claims 6, 7, 42, 48, 49, 68 to 71 and 73 to 108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narui et al. and Fazan et al. (U.S. Patent No. 5,793,076).

Narui et al. show most aspects of the instant invention (Paragraph 5) except for the cylinder shape of the storage electrode. Fazan et al. teach (e.g. Figure 14) to make storage electrodes **44** cylindrical in shape to increase the density of the DRAM cells (Column 3 Lines 15 to 27). It would have been obvious to a person of ordinary skill in the art at the time of invention to make storage electrodes cylindrical in shape as taught by Fazan et al. in the device of Narui et al. to increase the density of the DRAM cells.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hamamoto et al. (U.S. Patent No. 5,561,311) show DRAMs similar to the instant invention.
8. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must

Art Unit 2814

conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications. The official TC2800 Before-Final, **(703) 872-9318**, and After-Final, **(703) 872-9319**. Fax numbers will provide the fax sender with an auto-reply fax verifying receipt of their fax by the USPTO.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(703) 308-4840** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 Receptionist at **(703) 308-0956**.

10. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/ 311, 535	12/2/02
Other Documentation: PLUS Analysis Report	11/4/02
Electronic Database(s): EAST	12/2/02

HW/hw
3 December 2002


Howard Weiss
Patent Examiner
Art Unit 2814